

- i. **RPA.** A dilution ratio of 20:1 is available for chronic whole effluent toxicity. Chronic toxicity testing results exceeding 20 chronic toxicity units (TUc) (as 100/NOEC) and a percent effect at 5 percent effluent exceeding 25 percent demonstrates the discharge has a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. Based on chronic toxicity testing conducted between 2/22/2010 through 3/26/2010 the maximum chronic toxicity result was 1.9 TUc on 2/22/2010, therefore, the discharge does not have reasonable potential to cause or contribute to an instream exceedance of the Basin Plan's narrative toxicity objective.

D. Final Effluent Limitation Considerations

1. Mass-based Effluent Limitations

40 C.F.R. section 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 C.F.R. section 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 C.F.R. section 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., CTR criteria and MCL's) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

Mass-based effluent limitations were calculated based upon the design peak wet weather flow as defined in Discharge Prohibitions section III.G of this Order.

2. Averaging Periods for Effluent Limitations

40 C.F.R. section 122.45 (d) requires average weekly and average monthly discharge limitations for POTW's unless impracticable. For copper, total recoverable, average weekly effluent limitations have been replaced with maximum daily effluent limitations in accordance with Section 1.4 of the SIP. Furthermore for BOD₅ and TSS, weekly average effluent limitations have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents is discussed in section IV.C.3 of this Fact Sheet.

3. Satisfaction of Anti-Backsliding Requirements

The CWA specifies that a revised permit may not include effluent limitations that are less stringent than the previous permit unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in CWA sections 402(o) or 303(d)(4), or, where applicable, 40 C.F.R. section 122.44(l).

The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of effluent limitations for BOD₅ and TSS. The effluent limitations for these pollutants are less stringent than those in Order R5-2009-0093. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

- a. **CWA section 402(o)(1) and 303(d)(4).** CWA section 402(o)(1) prohibits the establishment of less stringent water quality-based effluent limits "*except in compliance with Section 303(d)(4).*" CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters.

- i. For waters where standards are not attained, CWA section 304(d)(4)(A) specifies that any effluent limit based on a TMDL or other WLA may be revised only if the cumulative effect of all such revised effluent limits based on such TMDL's or WLAs will assure the attainment of such water quality standards.
- ii. For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy.

The Middle Fork of the Feather River is considered an attainment water for BOD₅ and TSS because the receiving water is not listed as impaired on the 303(d) list for this constituent.¹⁵ As discussed in section IV.D.4, below, relaxation of the effluent limits complies with federal and state antidegradation requirements. Thus, relaxation of the effluent limitations for BOD₅ and TSS from Order R5-2009-0093 meets the exception in CWA section 303(d)(4)(B).

- b. **CWA section 402(o)(2).** CWA section 402(o)(2) provides several exceptions to the anti-backsliding regulations. CWA 402(o)(2)(B)(i) allows a renewed, reissued, or modified permit to contain a less stringent effluent limitation for a pollutant if the Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under subsection (a)(1)(B). CWA 402(o)(2)(B)(i) allows a renewed, reissued, or modified permit to contain a less stringent effluent limitation for a pollutant if information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.
 - i. **TSS.** The previous permit determined the Facility is eligible for equivalent to secondary treatment limitations and included a minimum effluent percent removal of 65% for TSS. However, the 30-day average and 7-day average effluent limits remained at 30 mg/L and 45 mg/L, respectively, to reflect secondary treatment standards. Per CWA 402(o)(2)(B)(i), Central Valley Water Board staff has determined that the previous permit mistakenly interpreted the effluent limits for 30-day and 7-day average, and they should have reflected equivalent to secondary standards. Effluent monitoring data collected between May 2016 and May 2018 indicates that the effluent concentrations consistently achievable through proper operations and maintenance is in excess of the secondary treatment standards set forth in 40 C.F.R. parts 133.102 (a) and (b). The 95th percentile value for the 30-day average is 35 mg/L, above the secondary treatment standard of 30 mg/L, and the value equal to 1.5 times 35 mg/L is greater than the 7-day average secondary treatment standard, as described in 40 C.F.R. 133.101(f)(2). In addition, the principle treatment process at the Facility is a waste stabilization pond and the Facility provides significant biological treatment per 40 C.F.R. part 133.101(k). Therefore, the Facility is eligible for equivalent-to-secondary standards that are less stringent than TSS effluent limits in Order R5-2009-0093.
 - ii. **BOD₅.** The previous permit determined the Facility is eligible for equivalent to secondary treatment limitations and included a minimum effluent percent

¹⁵ "The exceptions in Section 303(d)(4) address both waters in attainment with water quality standards and those not in attainment, i.e. waters on the section 303(d) impaired waters list." State Water Board Order WQ 2008-0006, Berry Petroleum Company, Poso Creek/McVan Facility.

removal of 65% for BOD₅. However, the 30-day average and 7-day average effluent limits remained at 30 mg/L and 45 mg/L, respectively, to reflect secondary treatment standards. Per CWA 402(o)(2)(B)(i), Central Valley Water board staff has determined that the previous permit mistakenly interpreted the effluent limits for 30-day and 7-day average, and they should have reflected equivalent to secondary standards. Effluent monitoring data collected between May 2016 and May 2018 indicates that the effluent concentrations consistently achievable through proper operations and maintenance results in the Facility being eligible for equivalent-to-secondary standards that are less stringent than BOD₅ effluent limits in Order R5-2009-0093.

4. Antidegradation Policies

- a. **Surface Water.** The permitted surface water discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and the State Anti-Degradation Policy. This Order provides for an increase in the volume and mass of pollutants discharged. The increase will not have significant impacts on aquatic life, which is the beneficial use most likely affected by the pollutants discharged (BOD₅ and TSS). The increase will not cause a violation of water quality objectives. The increase in the discharge allows wastewater utility service necessary to accommodate housing and economic expansion in the area, and is considered to be a benefit to the people of the State. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge.
- b. **Groundwater.** The Discharger utilizes unlined stabilization ponds for treatment of domestic wastewater. Domestic wastewater contains constituents such as total dissolved solids (TDS), specific conductivity, pathogens, nitrates, organics, metals and oxygen demanding substances (BOD). Percolation from the treatment ponds may result in an increase in the concentration of these constituents in groundwater. The State Anti-Degradation Policy generally prohibits the Central Valley Water Board from authorizing activities that will result in the degradation of high-quality waters unless it has been shown that:
 - i. The degradation will not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives;
 - ii. The degradation will not unreasonably affect present and anticipated future beneficial uses;
 - iii. The discharger will employ Best Practicable Treatment or Control (BPTC) to minimize degradation; and
 - iv. The degradation is consistent with the maximum benefit to the people of the state.

Some degradation of groundwater may be consistent with the State Anti-Degradation Policy provided that the Discharger is implementing best practicable treatment or control (BPTC) measures. The Facility is designed and constructed to provide secondary level treatment and disinfection to treat municipal domestic wastewater prior to discharge. This level of treatment may result in limited groundwater degradation not exceeding water quality objectives. Providing

wastewater treatment to the community is in the best interest of the people of the state. The Discharger's treatment constitutes best practicable treatment or control and complies with the State Anti-Degradation Policy.

This Order requires the Discharger to conduct groundwater characterization in order to complete an antidegradation re-evaluation as specified in Special Provisions section VI.C.2.d of this Order. Groundwater monitoring, as specified in the MRP (see Attachment E of this Order), along with technical reports required per sections VI.C.2.b and VI.C.2.c of this Order, and the antidegradation re-evaluation will be used to evaluate degradation, if any, to the groundwater quality when compared to background as a result of the discharge. Groundwater limitations have been included in this order (at or below) the water quality objective for protection of the domestic or municipal supply (MUN) beneficial use of groundwater.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBEL's for individual pollutants. The technology-based effluent limitations consist of restrictions on pH, BOD₅, and TSS. Restrictions on these constituents are discussed in Section IV.B of the Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. These limitations are not more stringent than required by the CWA.

WQBEL's have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBEL's were derived from the CTR, the CTR is the applicable standard pursuant to 40 C.F.R. section 131.38. The procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR implemented by the SIP, which was approved by U.S. EPA on 18 May 2000. Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

Summary of Final Effluent Limitations Discharge Point D-001

Table F-12. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis ¹
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Conventional Pollutants							
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	45	65	90	--	--	CFR
	lbs/day ²	375	542	751	--	--	
	% Removal	65	--	--	--	--	
pH	standard units	--	--	--	6.0	9.0	CFR
Total Suspended Solids	mg/L	45	65	90	--	--	CFR
	lbs/day ²	375	542	751	--	--	
	% Removal	65	--	--	--	--	
Priority Pollutants							
Copper, Total Recoverable	µg/L	26	--	53	--	--	CTR
Non-Conventional Pollutants							

Parameter	Units	Effluent Limitations					Basis ¹
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Acute Toxicity	% Survival	--	--	70 ³ /90 ⁴			BP
Ammonia (as N)	mg/L	18	34	--	--	--	NAWQC
Ammonia (as N)	lbs/day	150	292	--	--	--	NAWQC
Chlorine, Total Residual	mg/L	--	0.011 ⁵	0.019 ⁶	--	--	NAWQC
Electrical Conductivity @ 25°C	µmhos/cm	684 ⁷	--	--	--	--	BP
Total Coliform Organisms	MPN/100 mL	--	23 ⁸	240 ⁹	--	--	Title 22

- ¹ DC – Based on the design capacity of the Facility.
CFR – Based on secondary treatment standards contained in 40 CFR part 133.
BP – Based on water quality objectives contained in the Basin Plan.
CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
NAWQC – Based on U.S. EPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
Title 22 – Based on State Water Board Division of Drinking Water Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).
- ² Based on peak wet weather flow of 1.0 MGD.
² 70% minimum of any one bioassay.
² 90% median for any three consecutive bioassays.
² Applied as a 4-day average effluent limitation.
² Applied as a 1-hour average effluent limitation.
² Applied as a 7-day median effluent limitation.
² Not to be exceeded more than once in any 30-day period.

E. Land Discharge Specifications – Not Applicable

F. Recycling Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Central Valley Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that “[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses.” The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains receiving surface water limitations based on the Basin Plan numerical and narrative water quality objectives for bacteria, biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, salinity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.

B. Groundwater

1. The beneficial uses of the underlying groundwater are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.

2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan also establishes numerical water quality objectives for chemical constituents and radioactivity in groundwaters designated as municipal supply. These include, at a minimum, compliance with MCLs in Title 22 of the CCR. The bacteria objective prohibits coliform organisms at or above 2.2 MPN/100 mL. The Basin Plan requires the application of the most stringent objective necessary to ensure that waters do not contain chemical constituents, toxic substances, radionuclides, taste- or odor-producing substances, or bacteria in concentrations that adversely affect municipal or domestic supply, agricultural supply, industrial supply or some other beneficial use.
3. Total dissolved solids, which were found to be present in the wastewater at an average concentration of 244 mg/L, have the potential to degrade groundwater quality at this site because there is little ability for attenuation in the shallow permeable vadose zone beneath this Facility. According to Ayers and Westcot, dissolved solids can cause yield or vegetative growth reductions of sensitive crops if present in excess of 450 mg/L in irrigation water, thereby impairing agricultural use of the water resource. The applicable water quality objective to protect the agricultural use from discharges of total dissolved solids is the narrative Chemical Constituents objective, which is applied following the "Policy of Application of Water Quality Objectives" in the Basin Plan. A numerical groundwater limitation of 450 mg/L for total dissolved solids, based on Ayers and Westcot, is appropriate to apply the narrative Chemical Constituents objective to protect the unrestricted agricultural use of groundwater in the absence of information to support a less protective limit.
4. Nitrate, which was found to be present in the wastewater at an average concentration of up to 0.64 mg/L as nitrogen, has the potential to degrade groundwater quality because there is little ability for attenuation in the shallow permeable vadose zone beneath the Facility. Furthermore, groundwater monitoring data show nitrate concentrations above the primary MCL of 10 mg/L in monitoring well RGW-003. The Chemical Constituents objective prohibits concentrations of chemical constituents in excess of California MCLs in groundwater that is designated as municipal or domestic supply. The California primary MCL for nitrate is equivalent to 10 mg/L as nitrogen, and groundwater beneath the facility is designated as municipal or domestic supply. It is therefore appropriate to adopt a numerical groundwater limitation of 10 mg/L for nitrate as nitrogen to implement the Chemical Constituents objective to protect the municipal and domestic use of groundwater.
5. pH, which ranged 6.9 to 8.7 standard units in the domestic wastewater, has the ability to degrade groundwater quality at this site because there is little potential for buffering in the shallow permeable vadose zone. According to Ayers and Westcot, pH less than 6.5 or greater than 8.4 can cause yield or vegetative growth reductions of sensitive crops if present in irrigation water, thereby impairing agricultural use of the water resource. The applicable water quality objective to protect the agricultural use from discharges of substances that affect pH is the narrative Chemical Constituents objective, which is applied following the "Policy of Application of Water Quality Objectives" in the Basin Plan. A numerical groundwater limitation range of 6.5 to 8.4 for pH, based on Ayers and

Westcot, is relevant and appropriate to apply the narrative Chemical Constituents objective to protect unrestricted agricultural use of groundwater in the absence of information to support a less protective limit.

6. Ammonia has the potential to degrade groundwater quality because there is little ability for ammonia attenuation in the shallow permeable vadose zone at this site. According to Amoores and Hautala¹⁶, who evaluated odor of ammonia in water, the odor threshold for ammonia in water is 1.5 mg/L (as NH₄). These authors studied the concentration of chemicals in air that caused adverse odors and then calculated the concentration in water that would be equivalent to that amount in air. Therefore, it is appropriate to use the data contained therein to apply the narrative Tastes and Odors water quality objective. Concentrations that exceed this value can impair the municipal or domestic use of the resource by causing adverse odors. The applicable water quality objective to protect the municipal and domestic use from discharges of odor producing substances is the narrative Tastes and Odors objective, which is applied following the "Policy of Application of Water Quality Objectives" in the Basin Plan. A numerical groundwater limitation of 1.5 mg/L for ammonia (as NH₄), based on Amoores and Hautala, is relevant and appropriate to apply the narrative Tastes and Odors objective to protect the municipal and domestic use of groundwater.
7. Groundwater limitations are required to protect the beneficial uses of the underlying groundwater.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. section 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) of 40 C.F.R. allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

- a. **Mercury.** This provision allows the Central Valley Water Board to reopen this Order in the event mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted. In addition, this Order may be reopened if the Central Valley Water Board determines that a mercury offset program is feasible for dischargers subject to NPDES permits.

¹⁶ Amoores, J.E. and E. Hautala, Odor as an Aid to Chemical Safety: Odor Thresholds Compared with Threshold Limit Values and Volatilities for 214 Industrial Chemicals in Air and Water Dilution, Journal of Applied Toxicology, Vol. 3, No. 6, (1983).

- b. **Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a site-specific Toxicity Reduction Evaluation (TRE). This Order may be reopened to include a new chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE.
- c. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
- d. **Salinity/EC Site-Specific Study.** This Order requires the Discharger to complete and submit a report on the results of salinity/EC site-specific studies to determine appropriate salinity/EC levels to meet the Basin Plan objective of 150 $\mu\text{mhos/cm}$ (90th percentile) in well-mixed waters of the Middle Fork of the Feather River (over a 10 year rolling average) and include a discussion of whether discharge may be minimized or eliminated when the EC in the Middle Fork of the Feather River exceeds 150 $\mu\text{mhos/cm}$. The studies shall be completed and submitted to the Central Valley Water Board as specified in section VI.C.2.e of this Order. Based on a review of the results of the report on the salinity/EC site-specific studies this Order may be reopened for addition of an effluent limitation and requirements for salinity and/or EC.
- e. **Background Groundwater Quality Study Report.** This Order requires the Discharger to complete and submit a technical report to evaluate impacts from the Facility on groundwater per sections VI.C.2.b and VI.C.2.c of this Order. Based on a review of the results of the reports this Order may be reopened for addition of groundwater effluent limitations and requirements.

2. Special Studies and Additional Monitoring Requirements

- a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, “*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*” (Basin Plan at page III-8.00). Based on whole effluent chronic toxicity testing performed by the Discharger from 2/22/2010 through 3/26/2010, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan’s narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring to demonstrate compliance with the Basin Plan’s narrative toxicity objective. If the discharge exceeds the chronic toxicity monitoring trigger this provision requires the Discharger conduct a site-specific Toxicity Reduction Evaluation (TRE).

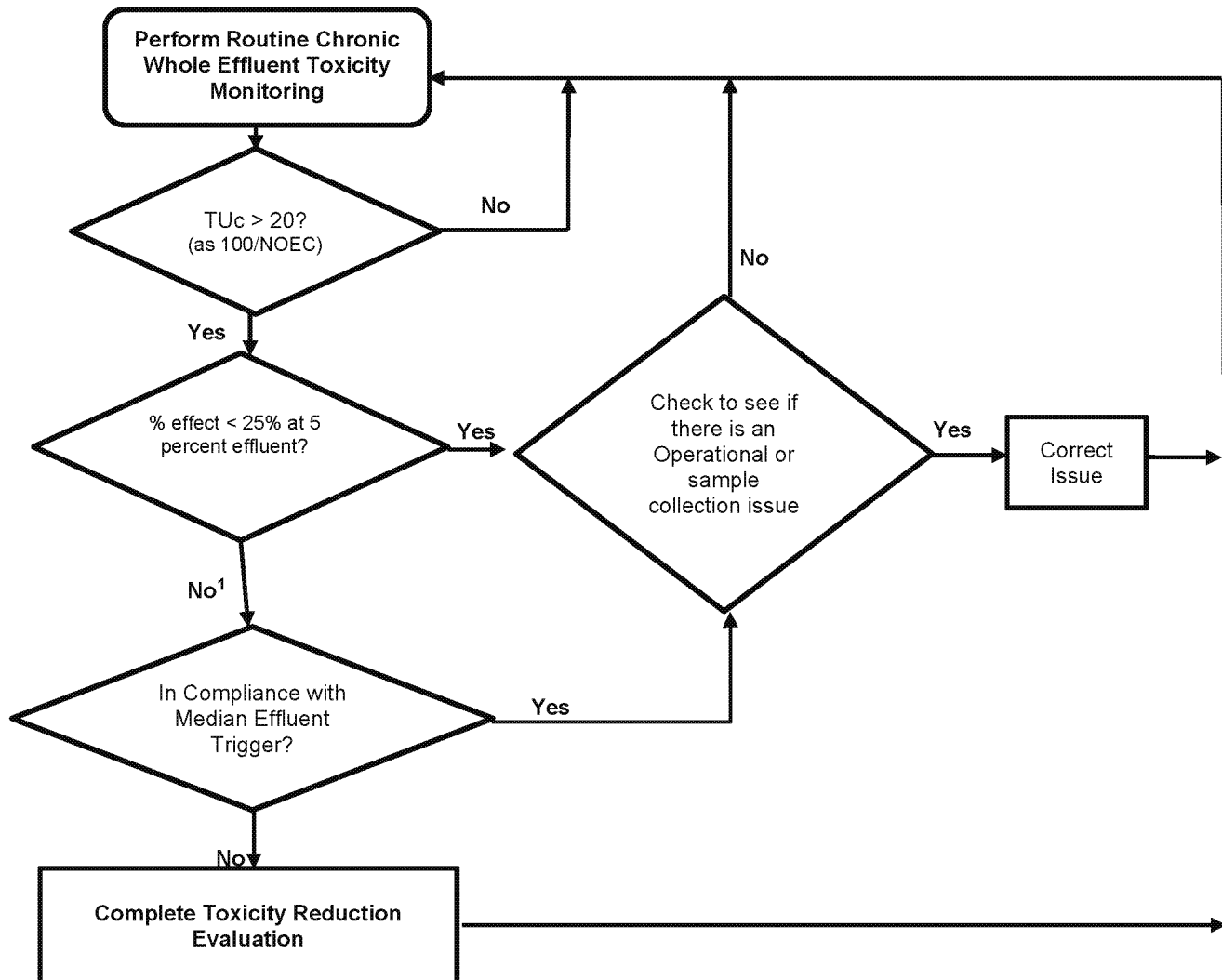
See the WET Monitoring Flow Chart (Figure F-2), below, for further clarification of the decision points for determining the need for TRE initiation.

TRE Guidance. The Discharger is required to prepare a TRE Work Plan in accordance with U.S. EPA guidance. Numerous guidance documents are available, as identified below:

- i. *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*, EPA/833-B-99/002, August 1999.

- ii. *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs)*, EPA/600/2-88/070, April 1989.
- iii. *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition*, EPA 600/6-91/003, February 1991.
- iv. *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*, EPA/600/6-91/005F, May 1992.
- v. *Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition*, EPA/600/R-92/080, September 1993.
- vi. *Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition*, EPA 600/R-92/081, September 1993.
- vii. *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition*, EPA-821-R-02-012, October 2002.
- viii. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA-821-R-02-013, October 2002.
- ix. *Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-001, March 1991.

Figure F-2
Chronic WET Monitoring Flow Chart



¹ The Discharger may elect to take additional samples to determine the 3 sample median. The samples shall be collected at least one week apart and the final sample shall be within 6 weeks of the initial sample exhibiting toxicity.

- f. **Background Groundwater Quality Study Report.** Within one year of the effective date of this order, the Discharger shall submit a Background Groundwater Quality Study report. For each groundwater monitoring parameter/constituent identified in the MRP, the report shall present a summary of monitoring data, calculation of the concentration in the background monitoring well, and a comparison to downgradient wells used to monitor the Facility. This report is required because data collected during the last 5 years indicates the Facility may be degrading groundwater quality compared to background levels. In addition, the Discharger did not submit a technical report pursuant to VI.C.2.c of Order R5-2009-0093 during the effective permit term to characterize natural background quality of measured constituents or

compare “background groundwater quality to that in wells used to monitor the Facility”.

- g. **Best Practicable Treatment or Control (BPTC) Evaluation Workplan.** If the Background Groundwater Quality Study shows that the Facility is causing groundwater to contain waste constituents (other than total dissolved solids, sodium and chloride) in concentrations statistically greater than background water quality, then by one year after approval of the Background Groundwater Quality Study by the Executive Officer, the Discharger shall submit a BPTC Evaluation Workplan that sets forth the scope and schedule for a systematic and comprehensive technical evaluation of each component of the Facility's waste treatment and disposal systems (including percolation into groundwater from all ponds) to determine best practicable treatment and control with respect to minimizing the impact to groundwater quality. Where deficiencies are documented, the technical report shall provide recommendations for necessary modifications (e.g., new or revised salinity source control measures, WWTP component upgrade and retrofit) to achieve BPTC and identify the source of funding and proposed schedule for modifications. This report is required because data collected during the last 5 years indicates the Facility may be degrading groundwater quality compared to background levels. In addition, the Discharger did not submit a technical report pursuant to VI.C.2.c of Order R5-2009-0093 during the effective permit term “critiquing each evaluated component of the Facility with respect to BPTC and minimizing the discharge’s impact on groundwater quality”.
- h. **Antidegradation Re-evaluation.** The Discharger is required to submit an Antidegradation Re-evaluation, as specified in section VI.C.2.c, to confirm that the land discharge continues to be consistent with the *State Anti-degradation Policy*.
- i. **Salinity/EC Site-Specific Studies.** This Order requires the Discharger to complete and submit a report on the results of salinity/EC site-specific studies to determine appropriate effluent salinity/EC levels to meet the Basin Plan objective of 150 $\mu\text{mhos/cm}$ (90th percentile) in well-mixed waters of the Middle Fork of the Feather River (over a 10 year rolling average) and include a discussion of whether discharge may be minimized or eliminated when the EC in the Middle Fork of the Feather River exceeds 150 $\mu\text{mhos/cm}$. Based on these factors, the study shall recommend site-specific numeric values for effluent salinity/EC that meet the Basin Plan objective in the Middle Fork of the Feather River. The study will also include discussion of whether the discharge may be minimized or eliminated when the salinity/EC in the Middle Fork of the Feather River exceeds 150 $\mu\text{mhos/cm}$. The Central Valley Water Board will evaluate the recommendations, select appropriate values, reevaluate reasonable potential for salinity/EC, and reopen the permit, as necessary, to include appropriate effluent limitations for these constituents. The study shall be completed and submitted to the Central Valley Water Board within 27 months following approval of the study workplan and time schedule by the Executive Officer. This study is required because data collected during the last permit term suggests that the EC levels in the river typically exceed the Basin Plan objective when the Facility is not discharging. The Discharger shall evaluate whether the discharge may be minimized or eliminated when the measured value in the Middle Fork of the Feather River is above the Basin Plan objective so that the Facility does not contribute to an exceedance of water quality objectives.
- j. **Regionalization Evaluation.** Within one year of the effective date of this Order, the Discharger shall submit a report that assesses the feasibility to regionalize wastewater treatment with Delleker WWTP. The report should consider all pollutant

loading and flow at both WWTP's from a minimum of the last 5 years and consider the findings and goals outlined in Resolution R5-2009-0028.

3. Best Management Practices and Pollution Prevention

Salinity Evaluation and Minimization Plan. An Evaluation and Minimization Plan for salinity is required in this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity to Middle Fork of the Feather River.

The Discharger shall evaluate the effectiveness of the SEMP and provide a summary with the Report of Waste Discharge. Furthermore, if the effluent annual average calendar year electrical conductivity concentration exceeded 900 µmhos/cm during the term of this Order, the SEMP shall be reviewed and updated. The updated salinity evaluation and minimization plan shall be submitted by 1 April following the calendar year in which the electrical conductivity concentration exceeded 900 µmhos/cm.

4. Construction, Operation, and Maintenance Specifications

- a. The operation and maintenance specifications for the Facility are necessary to protect the beneficial uses of the groundwater. In addition, reporting requirements related to use of the treatment ponds are required to monitor their use and the potential impact on groundwater.

5. Special Provisions for Publicly-Owned Treatment Works (POTWs)

- a. **Sludge/Biosolids Treatment or Discharge Specifications.** Sludge in this Order means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the wastewater treatment plant. Biosolids refer to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agricultural, silvicultural, horticultural, and land reclamation activities as specified under 40 C.F.R. part 503. This Order does not regulate offsite use or disposal of biosolids, which are regulated instead under 40 C.F.R. part 503; administered by U.S. EPA. The Sludge/Biosolids Treatment or Discharge Specifications in this Order implement the California Water Code to ensure sludge/biosolids are properly handled onsite to prevent nuisance, protect public health, and protect groundwater quality.

6. Other Special Provisions – Not Applicable

7. Compliance Schedules – Not Applicable

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 C.F.R. sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and Reporting Program (MRP), Attachment E of this Order establishes monitoring, reporting, and recordkeeping requirements that implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD₅ and TSS reduction requirements). The monitoring frequencies for BOD₅ and TSS (1/week) have been retained from Order No. R5-2009-0093.
2. Influent monitoring for total dissolved solids (quarterly), hardness (quarterly), EC (weekly), and pH (weekly) was added to maintain consistency with monitoring requirements for similar facilities downstream.

B. Septage Monitoring

1. Septage monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD₅ and TSS reduction requirements). The monitoring frequencies for BOD₅ and TSS (1/week) have been retained from Order No. R5-2009-0093.

C. Effluent Monitoring

1. Pursuant to the requirements of 40 C.F.R. section 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.
2. **Monitoring Location EFF-001**
 - a. This Order establishes a new effluent monitoring location immediately after the chlorine contact basin and prior to the six-acre pond, named Monitoring Location EFF-001, for the purposes of determining compliance with effluent limitations for total coliform organisms during the periods of discharge to the Middle Fork of the Feather River.

The compliance point for total coliform organisms was moved from the last permit (at Monitoring Location EFF-002) to the end of the chlorine contact basin to ensure the treatment system provides adequate disinfection. This Order maintains the monitoring frequency from Order R5-2009-0093 for total coliform organisms (weekly).

3. **Monitoring Location EFF-002**
 - a. Effluent monitoring frequencies and sample types for flow (daily), pH (daily), BOD₅ (weekly), TSS (weekly), copper (monthly), total residual chlorine (continuous), temperature (daily), ammonia (weekly), hardness (monthly), nitrate (monthly), nitrite (monthly), aluminum (quarterly), iron (quarterly), standard minerals (yearly), total dissolved solids (monthly), acute toxicity (twice per discharge season), and chronic toxicity (twice per permit term) have been retained from Order R5-2009-0093 to determine compliance with effluent limitations for these parameters.
 - b. Monitoring data collected over the previous permit term for cyanide, total trihalomethanes, and 4,4'-DDD did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order No. R5-2009-0093.
 - c. Effluent monitoring frequencies for EC (3/week), manganese (quarterly), and priority pollutants (twice per permit term) have been increased from Order No. R5-2009-0093 to get a better characterization of the discharge due to the limited data obtained during the last permit caused by the intermittent discharge.

- d. Effluent monitoring for total nitrogen (monthly) and sulfate (yearly) has been added to Order No. 2009-0093. Total nitrogen monitoring has been added to characterize the total nitrogen in the wastewater at different stages of the treatment process in conjunction with pond sampling. As specified in section IV.C.3.d.v.b.3 of the Fact Sheet, there is not enough sulfate data to determine if the discharge exhibits reasonable potential to cause or contribute to an exceedance of the Secondary MCL. Therefore, this Order adds monthly sulfate monitoring to provide adequate data to determine if the discharge exhibits reasonable potential to cause or contribute to an exceedance of the Secondary MCL.
- e. Water Code section 13176, subdivision (a), states: *"The analysis of any material required by [Water Code sections 13000-16104] shall be performed by a laboratory that has accreditation or certification pursuant to Article 3 (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code."* The DDW accredits laboratories through its Environmental Laboratory Accreditation Program (ELAP).

Section 13176 cannot be interpreted in a manner that would violate federal holding time requirements that apply to NPDES permits pursuant to the CWA. (Wat. Code §§ 13370, subd. (c), 13372, 13377.) Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements. (Wat. Code § 13372, subd. (a).) The holding time requirements are 15 minutes for chlorine residual, dissolved oxygen, and pH, and immediate analysis is required for temperature (40 C.F.R. § 136.3(e), Table II). Due to the location of the Facility, it is both legally and factually impossible for the Discharger to comply with section 13176 for constituents with short holding times.

D. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Monthly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity. Rainbow trout was specified as a more appropriate test species likely to be found in colder temperature water in the Middle Fork of the Feather River.
2. **Chronic Toxicity.** Consistent with Order R5-2009-0093, chronic whole effluent toxicity testing is required twice during the permit term in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

E. Receiving Water Monitoring

1. Surface Water

- a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.
- b. Receiving water monitoring requirements have been retained for flow (continuous), dissolved oxygen (weekly), pH (weekly), turbidity (weekly), fecal coliform (monthly) and priority pollutants (twice during permit term). The Central Valley Water Board finds that this frequency is sufficient to characterize the receiving water.
- c. Receiving water monitoring requirements have been added for temperature (weekly), EC (weekly), copper, total recoverable (monthly), ammonia (as N) (weekly), aluminum (quarterly), iron (quarterly), manganese (quarterly), chloride (quarterly), sulfate (quarterly), and Total Dissolved Solids (yearly). The Central

Valley Water Board finds that this frequency is sufficient to characterize the receiving water.

- d. Receiving water monitoring requirements have been reduced for hardness (quarterly). The Central Valley Water Board finds that this frequency is sufficient to characterize the receiving water.
- e. Receiving water monitoring requirements at RSW-003 for EC has been retained in order to continue characterizing the EC in the Middle Fork of the Feather River to compare to the objective in the Basin Plan.

2. Groundwater

- a. Water Code section 13267 states, in part, “(a) A *Regional Water Board, in establishing...waste discharge requirements... may investigate the quality of any waters of the state within its region*” and “(b) (1) *In conducting an investigation..., the Regional Water Board may require that any person who... discharges... waste...that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Water Board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports.*” The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, a Regional Water Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports. The Monitoring and Reporting Program is issued pursuant to Water Code section 13267. The groundwater monitoring and reporting program required by this Order and the Monitoring and Reporting Program are necessary to assure compliance with these waste discharge requirements. The Discharger is responsible for the discharges of waste at the Facility subject to this Order.
- b. Monitoring of the groundwater must be conducted to determine if the discharge has caused an increase in constituent concentrations, when compared to background. The monitoring must, at a minimum, require a complete assessment of groundwater impacts including the vertical and lateral extent of degradation, an assessment of all wastewater-related constituents which may have migrated to groundwater, an analysis of whether additional or different methods of treatment or control of the discharge are necessary to provide best practicable treatment or control to comply with the State Anti-Degradation Policy. Economic analysis is only one of many factors considered in determining best practicable treatment or control. If monitoring indicates that the discharge has incrementally increased constituent concentrations in groundwater above background, this permit may be reopened and modified. Until groundwater monitoring is sufficient, this Order contains Groundwater Limitations that allow groundwater quality to be degraded for certain constituents when compared to background groundwater quality, but not to exceed water quality objectives. If groundwater quality has been degraded by the discharge, the incremental change in pollutant concentration (when compared with background) may not be increased. If groundwater quality has been or may be degraded by the discharge, this Order may be reopened and specific numeric limitations established consistent with the State Anti-Degradation Policy and the Basin Plan.
- c. This Order requires the Discharger to continue groundwater monitoring and includes a regular schedule of groundwater monitoring in the attached Monitoring and Reporting Program. The groundwater monitoring reports are necessary to evaluate

impacts to waters of the State to assure protection of beneficial uses and compliance with Central Valley Water Board plans and policies, including the State Anti-Degradation Policy. Evidence in the record includes effluent monitoring data that indicates the presence of constituents that may degrade groundwater and surface water.

F. Other Monitoring Requirements

1. Biosolids Monitoring

Biosolids monitoring is required to ensure compliance with the pretreatment requirements contained in 40 C.F.R. part 403 and implemented in section VI.C.5.a. of this Order. Biosolids monitoring is required per U.S. EPA guidance to evaluate the effectiveness of the pretreatment program. Biosolids monitoring for compliance with 40 C.F.R. part 503 regulations is not included in this Order since it is a program administered by U.S. EPA's part 503 biosolids program:

<https://www.epa.gov/biosolids/compliance-and-annual-reporting-guidance-about-clean-water-act-laws>

2. Water Supply Monitoring

Water supply monitoring is required to evaluate the source of constituents in the wastewater.

3. Pond Monitoring

- a. Treatment pond monitoring is required to ensure proper operation of the treatment ponds. Monthly monitoring for dissolved oxygen, seepage through dikes, excessive odors, excessive weed growth in ponds, and freeboard have been retained from Order R5-2009-0093 at all ponds except PND-009.
- b. Treatment pond monitoring requirements have been added for pH (monthly) and electrical conductivity (monthly) at all ponds except PND-009. The Central Valley Water Board finds that this frequency is sufficient to characterize wastewater at different stages of the treatment process.
- c. Treatment pond monitoring requirements have been added for total nitrogen (monthly) at the influent to PND-003 and PND-008. The Central Valley Water Board finds that this frequency is sufficient to characterize total nitrogen in the wastewater at different stages of the treatment process.
- d. Treatment pond monitoring requirements have been added for influent and effluent flow (daily) and liquid presence (weekly) at PND-009 in order to determine if effluent is discharging to the Middle Fork of the Feather River after monitoring at EFF-001.

4. Land Discharge Monitoring – Not Applicable

5. Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program

Under the authority of section 308 of the CWA (33 U.S.C. § 1318), U.S. EPA requires all dischargers under the NPDES Program to participate in the annual DMR-QA Study Program. The DMR-QA Study evaluates the analytical ability of laboratories that routinely perform or support self-monitoring analyses required by NPDES permits. There are two options to satisfy the requirements of the DMR-QA Study Program: (1) The Discharger can obtain and analyze a DMR-QA sample as part of the DMR-QA Study; or (2) Per the waiver issued by U.S.EPA to the State Water Board, the Discharger can submit the results of the most recent Water Pollution Performance Evaluation Study from their own laboratories or their contract laboratories. A Water Pollution Performance

Evaluation Study is similar to the DMR-QA Study. Thus, it also evaluates a laboratory's ability to analyze wastewater samples to produce quality data that ensure the integrity of the NPDES Program. The Discharger shall submit annually the results of the DMR-QA Study or the results of the most recent Water Pollution Performance Evaluation Study to the State Water Board. The State Water Board's Quality Assurance Program Officer will send the DMR-QA Study results or the results of the most recent Water Pollution Performance Evaluation Study to U.S. EPA's DMR-QA Coordinator and Quality Assurance Manager.

VIII. PUBLIC PARTICIPATION

The Central Valley Water Board has considered the issuance of WDR's that will serve as an NPDES permit for the Portola Wastewater Treatment Plant. As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative WDR's and has encouraged public participation in the WDR adoption process.

A. Notification of Interested Persons

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through the following: posting of Notice of Public Hearing at entrance to the Facility, at Portola City Hall, and Portola Post Office.

The public had access to the agenda and any changes in dates and locations through the Central Valley Water Board's website at:
http://www.waterboards.ca.gov/centralvalley/board_info/meetings/

B. Written Comments

Interested persons were invited to submit written comments concerning tentative WDR's as provided through the notification process. Comments were due either in person or by mail to the Executive Office at the Central Valley Water Board at the address on the cover page of this Order.

To be fully responded to by staff and considered by the Central Valley Water Board, the written comments were due at the Central Valley Water Board office by 5:00 p.m. on 29 October 2018.

C. Public Hearing

The Central Valley Water Board held a public hearing on the tentative WDR's during its regular Board meeting on the following date and time and at the following location:

Date: 6,7 December 2018
Time: 8:30 a.m.
Location: Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670

Interested persons were invited to attend. At the public hearing, the Central Valley Water Board heard testimony pertinent to the discharge, WDR's, and permit. For accuracy of the record, important testimony was requested in writing.

D. Reconsideration of Waste Discharge Requirements

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of this Order at the following address, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

Or by email at waterqualitypetitions@waterboards.ca.gov

For instructions on how to file a petition for review, see
http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml

E. Information and Copying

The Report of Waste Discharge, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley Water Board by calling (916) 464-3291.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDR's and NPDES permit should contact the Central Valley Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Mike Nilsen at 530-224-4853.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Aluminum	µg/L	210 130 ¹	NA	750 200	750	-	-	-	-	200 ²	No
Ammonia Nitrogen, Total (as N)	mg/L	19.0	NA	2.54	2.54	1.27 ⁴ 3.17 ⁵	-	-	-	-	Yes
Chloride	mg/L	54	NA	250	-	-	-	-	-	250 ²	No ⁷
Copper, Total Recoverable	µg/L	13.0	ND	9.3	9.3	6.5	1300	-	-	1000 ²	Yes
Cyanide	µg/L	33	ND	5.2	22	5.2	700	220000	-	150 ³	No
Electrical Conductivity	µmhos/cm	1300 460 ¹	NA	150 ⁶	-	-	-	-	150 ⁶	900 ²	Yes
Iron	µg/L	300	NA	300	-	1000	-	-	-	300 ²	No
Manganese	µg/L	530	NA	50	-	-	-	100	-	50 ²	No ⁷
pH	standard units	8.7	8.5	6.5 - 8.5	-	-	-	-	6.5 – 8.5	6.5 – 8.5 ²	No
Sulfate	mg/L	NA	NA	250	-	-	-	-	-	250 ²	No ⁷
Total Dissolved Solids	mg/L	310	NA	500	-	-	-	-	-	500 ²	No

General Note: All inorganic concentrations are given as a total recoverable.

MEC = Maximum Effluent Concentration

B = Maximum Receiving Water Concentration or lowest detection level, if non-detect

C = Criterion used for Reasonable Potential Analysis

CMC = Criterion Maximum Concentration (CTR or NTR)

CCC = Criterion Continuous Concentration (CTR or NTR)

Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)

Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)

Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective

MCL = Drinking Water Standards Maximum Contaminant Level

NA = Not Available

ND = Non-detect

Footnotes:

(1) Maximum annual average

(2) Secondary MCL

(3) Primary MCL

(4) 30-day chronic criteria

(5) 4-day chronic criteria

(6) 150 µmhos/cm (90th percentile) in well-mixed waters based upon previous 10 years of record

(7) Not enough data to determine RP

ATTACHMENT H – CALCULATION OF WQBEL'S

Aquatic Life WQBEL's Calculations																	
Parameter	Units	Criteria		B	CV Eff	Dilution Factors		Aquatic Life Calculations							Final Effluent Limitations		
		CMC	CCC			CMC	CCC	ECA Multiplier _{acute}	LTA _{acute}	ECA Multiplier _{chronic}	LTA _{chronic}	AMEL Multiplier ₉₅	AWEL Multiplier	MDEL Multiplier ₉₉	AMEL ¹	AWEL ²	MDEL ³
Ammonia Nitrogen, Total (as N)	mg/L	2.54	1.27	0.61	0.80 ⁴	20	20	0.25	10.30	0.72	10.42	1.75	3.30	-	18	34	
Copper, Total Recoverable	µg/L	9.3	6.5	2.0 ⁵	0.60 ⁴	6	6	0.32	17.0	0.53	17.7	1.55	-	3.11	26	53	

¹ Average Monthly Effluent Limitations are calculated according to Section 1.4 of the SIP using a 95th percentile occurrence probability.

² Average Weekly Effluent Limitations are calculated according to Section 1.4 of the SIP using a 98th percentile occurrence probability.

³ Maximum Daily Effluent Limitations are calculated according to Section 1.4 of the SIP using a 99th percentile occurrence probability.

⁴ Coefficient of Variation (CV) was established in accordance with section 1.4 of the SIP.

⁵ Non-detect. MD = 2.0µg/L